(FILE 'HOME' ENTERED AT 12:39:30 ON 21 SEP 2000)

INDEX 'ADISALERTS, ADISINSIGHT, AGRICOLA, AIDSLINE, ANABSTR, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA,
CANCERLIT, CAPLUS, CEABA, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 12:39:40 ON 21 SEP 2000

SEA URIDINE(W)PHOSPHOGALACTOSE OR UDP-GALACTOSE

59	FILE AGRICOLA
1	FILE AIDSLINE
19	FILE ANABSTR
7	FILE AQUASCI
6	FILE BIOBUSINESS
1	FILE BIOCOMMERCE
1234	FILE BIOSIS
57	FILE BIOTECHABS
56	FILE BIOTECHDS
247	FILE BIOTECHNO
171	FILE CABA
91	FILE CANCERLIT
1875	FILE CAPLUS
6	FILE CEABA
1	FILE CEN
27	FILE CONFSCI
3	FILE CROPU
67	FILE DDFB
6	FILE DDFU
44	FILE DGENE
67	FILE DRUGB
11	FILE DRUGU
1	FILE EMBAL
761	FILE EMBASE
134	FILE ESBIOBASE
1	FILE FROSTI
16	FILE FSTA
796	FILE GENBANK
11	FILE IFIPAT
46	FILE JICST-EPLUS
2179	FILE LIFESCI
6409	FILE MEDLINE
2	FILE NTIS
3	FILE OLEAN
1	FILE PROMT
5017	FILE SCISEARCH
78	FILE TOXLINE
2180	FILE TOXLIT
1179	FILE USPATFULL
22	FILE WPIDS
22	FILE WPINDEX

L1 QUE URIDINE W) PHOSPHOGALACTOSE OR UDP-GALACTOSE

FILE 'MEDLINE, EMBASE, SCISEARCH, BIOSIS, CAPLUS, TOXLIT, CANCERLIT' ENTERED AT 12:41:47 ON 21 SEP 2000

L2 2713 S L1 AND (SYNTHESIS OR BIOSYNTHE? OR PROCESS OR PRODUC?)
L3 15 S L2 AND CORYNEBACTERIUM
L4 6 DUP REM L3 (9 DUPLICATES REMOVED)

=> d l4 ibib ab 1-6

L4 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 2000:51686 CAPLUS
DOCUMENT NUMBER: 132:3168
TITLE: Low cost enzymatic **biosynthesis** of oligosaccharides
INVENTOR(S): Nefrens, Shawn; Johnson, Karl
PATENT ASSIGNEE(S): Neose Technologies, Inc., USA
SOURCE: PCT Int. Appl., 103 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000009603	A2	20000224	WO 1999-US27599	19991118

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1998-109031 19981118
US 1998-109096 19981119

AB This invention provides recombinant cells, reaction mixts., and methods for the enzymic **synthesis** of saccharides. The recombinant cells contain a heterologous gene that encodes a glycosyltransferase which catalyzes at least one step in the enzymic **synthesis**, as well a system for generating a nucleotide sugar that can serve as a substrate for the glycosyltransferase. The nucleotide sugar may be supplied or synthesized by an enzymic pathway comprising a sugar nucleotide regeneration cycle. The reaction mixt. may contain a second cell type **producing** a nucleotide as a substrate for the sugar nucleotide regeneration cycle, preferably by a nucleotide synthase gene. Use of fusion proteins of glycosyltransferase and nucleotide sugar synthase combined with the use of an enzyme for substrate sugar **synthesis** is described. Chem. or enzymic sulfation may be used for the **synthesis** of sulfated sugars. The recombinant cells, reaction mixts., and methods are useful for efficiently synthesizing a large variety of saccharides, including polysaccharides, oligosaccharides, glycoproteins and glycolipids, using relatively low-cost starting materials. **Synthesis** of 3'-sialyllactose using E. coli expressing a CMP-sialic acid synthetase/.alpha.2,3-sialyltransferase fusion protein is described. Optional use of bakers yeast to **produce** CTP used in the sialic acid cycle and substrate for CMP-sialic acid synthase is also described. **Synthesis** of 3'-sialyllactose using E. coli expressing a CMP-sialic acid synthetase /.alpha.2,3-sialyltransferase fusion protein, GlcNAc 2'-epimerase, and sialic acid aldolase to synthesize CMP-sialic acid from GlcNAc is also described. Variations of the method using **Corynebacterium** expressing a CMP-sialic acid synthetase /.alpha.2,3-sialyltransferase

fusion protein and GTP-synthetase to **produce** the nucleotide, nucleotide sugar, [redacted] catalyzing sugar transfer to [redacted] acceptor saccharide is described. Finally, **synthesis** of trisaccharide Gal.alpha.1,3Gal.beta.1,4GlcNAc using **Corynebacterium** expressing UDP-glucose pyrophosphorylase, UDP-glucose-4'-epimerase, .beta.1,4-galactosyltransferase, and .alpha.1,3-galactosyltransferase is described.

L4 ANSWER 2 OF 6 SCISEARCH COPYRIGHT 2000 ISI (R)
ACCESSION NUMBER: [illegible] SCISEARCH
THE GENUINE ARTICLE: 345CE
TITLE: Cloning and expression of beta 1,4-galactosyltransferase gene from Helicobacter pylori
AUTHOR: Endo T (Reprint); Koizumi S; Takata K; Ozaki A
CORPORATE SOURCE: KYOWA HAKKO KOGYO CO LTD, TOKYO RES LABS, 3-6-6 ASAHI MACHI, TOKYO 194-8533, JAPAN (Reprint)
COUNTRY OF AUTHOR: JAPAN
SOURCE: GLYCOBIOLOGY, (AUG 2000) Vol. 10, No. 8, pp. 809-813. Publisher: OXFORD UNIV PRESS, GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND. ISSN: 0959-6658.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: [illegible]

ABSTRACT IS AVAILABLE IN THE ALI AND IALL FORMATS

AB Helicobacter pylori, which is a human pathogen associated with gastric and duodenal ulcer, has been shown to express human oncofetal antigens Lewis X and Lewis Y. Although the mammalian glycosyltransferases that synthesize these structures are well characterized, little is known about the corresponding bacterial enzymes. We report that a novel beta 1,4-galactosyltransferase gene (HpgalT) involved in the **biosynthesis** of lipopolysaccharides in H.pylori has been cloned and expressed in Escherichia coli. The deduced amino acid sequence of the protein (HpGal-T) encoded by HpgalT consists of 274 residues with the calculated molecular mass of 31,731 Da, which does not show significant similarity to those of beta 1,4-galactosyltransferases from mammalian sources and Neisseria. It was confirmed that HpGal-T catalyzed the introduction of galactose from UDP-Gal in a beta 1,4 linkage to accepting N-acetylglucosamine (GlcNAc) residues by means of high-performance anion-exchange chromatography with pulsed amperometric detection (HPAEC-PAD). When the E.coli cells which overexpressed HpgalT was coupled with the UDP-Gal **production** system, which consisted of recombinant E.coli cells overexpressing its UDP-Gal **biosynthetic** genes and **Corynebacterium** ammoniagenes, N-acetyllactosamine, a core structure of lipopolysaccharide of H.pylori, was efficiently **produced** from orotic acid, galactose, and GlcNAc.

L4 ANSWER 3 OF 6 MEDLINE
ACCESSION NUMBER: [illegible] MEDLINE
DOCUMENT NUMBER: [illegible]
TITLE: Large-scale **production** of N-acetyllactosamine through bacterial coupling.
AUTHOR: Endo T; Koizumi S; Takata K; Kakita S; Ozaki A
CORPORATE SOURCE: Tokyo Research Laboratories, Kyowa Hakko Kogyo Co., Ltd., Japan.. endo.tetsuo@kyowa.co.jp
SOURCE: CARBOHYDRATE RESEARCH, (1999 Mar 31) 316 (1-4) 179-83. Journal code: CNY. ISSN: 0008-6215.
PUB. COUNTRY: Netherlands
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199912
ENTRY WEEK: 19991202

AB A large-scale **production** system of N-acetyllactosamine, a core structure of various oligosaccharides, was established by a whole-cell reaction through the combination of recombinant Escherichia coli strains and **Corynebacterium** ammoniagenes. Two recombinant E. coli strains over-expressed the UDP-Gal **biosynthetic** genes and the beta-(1-->4)-galactosyltransferase gene of Neisseria gonorrhoeae, respectively. C. ammoniagenes contributed the **production** of UTP from orotic acid. N-Acetyllactosamine was accumulated at 279 mM (107 g L-1) after a 38 h reaction (2.5 L in volume) starting from orotic acid, D-galactose, and 2-acetamido-2-deoxy-D-glucose.

L4 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1998:197681 CAPLUS
DOCUMENT NUMBER: 128:35642
TITLE: **Processes** for **producing** sugar nucleotides and complex carbohydrates
INVENTOR(S): Koizumi, Satoshi; Sasaki, Katsutoshi; Endo, Tetsuo; Tabata, Kazuhiko; Ozaki, Akio
PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Japan; Koizumi, Satoshi; Sasaki, Katsutoshi; Endo, Tetsuo; Tabata, Kazuhiko; Ozaki, Akio
SOURCE: PCT Int. Appl., 119 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9812343	A1	19980326	WO 1997-JP3226	19970912
W: AU, BG, BR, CA, CN, CZ, HU, JP, KR, MX, NO, NZ, PL, RO, SG, SI, SK, UA, US, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2237849	AA	19980326	CA 1997-2237849	19970912
AU 9741263	A1	19980414	AU 1997-41263	19970912
EP 880441	A1	19981104	EP 1997-940862	19970912
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
CN 1231135	A	19990. 06	CN 1997-191606	19970912
PRIORITY APPLN. INFO.:			JP 1996-244451	19960917
			JP 1996-286066	19961028
			WO 1997-JP3226	19970912

AB Sugar nucleotides are manufd. with microorganism or enzyme **producing** NTP from nucleotide precursor and with microorganism or enzyme **producing** sugar nucleotides from sugar and NTP. Complex carbohydrates are manufd. with the described microorganism/enzyme and microorganism/enzyme that **produces** complex carbohydrates from sugar nucleotide and complex carbohydrate precursor. Also given was **prodn.** of N-acetylglucosamine-1-phosphate with galactokinase-high microorganism.

L4 ANSWER 5 OF 6 MEDLINE DUPLICATE 1
ACCESSION NUMBER: 1998414050 MEDLINE
DOCUMENT NUMBER: 98414050
TITLE: Large-scale **production** of **UDP-galactose** and globotriose by coupling metabolically engineered bacteria.
AUTHOR: Koizumi S; Endo T; Tabata K; Ozaki A
CORPORATE SOURCE: Tokyo Research Laboratories, Kyowa Hakko Kogyo Co., Ltd., Machida, Japan.. skoizumi@kyowa.co.jp
SOURCE: NATURE BIOTECHNOLOGY, (1998 Sep) 16 (9) 847-50.
Journal code: CQ3. ISSN: 1087-0156.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199901
ENTRY WEEK: 19990104

AB A large-scale **production** system of uridine 5'-diphospho-galactose (UDP-Gal) has been established by the combination of recombinant Escherichia coli and **Corynebacterium** ammoniagenes. Recombinant E. coli that overexpress the UDP-Gal **biosynthetic** genes galT, galK, and galU were generated. C. ammoniagenes contributes the **production** of uridine triphosphate (UTP), a substrate for UDP-Gal **biosynthesis**, from orotic acid, an inexpensive precursor of UTP. UDP-Gal accumulated to 72 mM (44 g/L) after a 21 h reaction starting with orotic acid and galactose. When E. coli cells that expressed the alpha1,4-galactosyltransferase gene of Neisseria gonorrhoeae were coupled with this UDP-Gal **production** system, 372 mM (188 g/L) globotriose (Galalpha1-4Galbeta1-4Glc), a trisaccharide portion of verotoxin receptor, was **produced** after a 36 h reaction starting with orotic acid, galactose, and lactose. No oligosaccharide by-**products** were observed in the reaction mixture. The **production** of globotriose was several times higher than that of UDP-Gal. The strategy of **producing** sugar nucleotides by combining metabolically engineered recombinant E. coli with a nucleoside 5'-triphosphate **producing** microorganism, and the concept of **producing** oligosaccharides by coupling sugar nucleotide **production** systems with glycosyltransferases, can be applied to the manufacture of other sugar nucleotides and oligosaccharides.

L4 ANSWER 6 OF 6 MEDLINE DUPLICATE 1
ACCESSION NUMBER: 97180960A MEDLINE
DOCUMENT NUMBER: 97180960
TITLE: The galE gene encoding the **UDP-galactose** 4-epimerase of Brevibacterium lactofermentum is coupled transcriptionally to the dmdR gene.
AUTHOR: Oguiza J A; Marcos A T; Malumbres M; Martin J F
CORPORATE SOURCE: Department of Ecology, Genetics and Microbiology, Faculty of Biology, University of Leon, Spain.
SOURCE: GENE, (1996 Oct 24) 177 (1-2) 103-7.
Journal code: F6P. ISSN: 0378-1119.
PUB. COUNTRY: Netherlands
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-S49613
ENTRY MONTH: 199702

AB The galE gene of Brevibacterium lactofermentum, encoding **UDP-galactose** 4-epimerase (EC 5.1.3.2), has been identified by DNA sequencing downstream from the orf1-sigB-dmdR region. The arrangement of the sigB-dtxR-galE cluster is also conserved in **Corynebacterium** diphtheriae. The deduced galE **product** was a protein of 329 aa residues (35.4 kDa) that shared a high degree of identity to known **UDP-galactose** 4-epimerase proteins from Gram-positive microorganisms (Streptomyces lividans and Streptococcus thermophilus). Transcriptional analysis of the dmdR and galE genes in nutrient-rich medium showed that these genes are part of an operon, that is actively transcribed as a biscistronic mRNA during the exponential growth phase, but transcription of the operon is decreased during the stationary growth phase. In addition, the dmdR gene was also expressed as a monocistronic 0.7-kb transcript during the active growth phase.

=> d his

L11 ANSWER 37 OF 42 TOXLIT
ACCESSION NUMBER: 1990:98326 TOXLIT
DOCUMENT NUMBER: CA-113-206233P
TITLE: Cloning and expression of **cDNA** for human membrane-bound beta-1,4-**galactosyltransferase**.
AUTHOR: Fukuda MN; Appert HA
SOURCE: (1990). PCT Int. Appl. PATENT NO. 90 07000 06/28/90 (La Jolla Cancer Research Foundation).
PUB. COUNTRY: United States
DOCUMENT TYPE: Patent
FILE SEGMENT: CA
LANGUAGE: English
OTHER SOURCE: CA 113:206233
ENTRY MONTH: 199012

AB A full-length **cDNA** encoding the membrane-bound form of beta-1,4-**galactosyltransferase** from human Golgi bodies is cloned and expressed in Escherichia **coli** and antibodies raised to peptides from the protein. The enzyme is involved in post-translational modification of proteins and there are pathol. consequences from deficiencies in the enzyme (congenital dyserythropoietic anemia type II). The full-length **cDNA** was constructed from a pair of overlapping clones from a human placental **cDNA** library in lambdagt11 and expressed in E. **coli** using pIN-III-ompA3 as the expression vector. Antibodies to a peptide from the carboxy-terminal region of the protein were raised in rabbits by conventional methods.

L11 ANSWER 39 OF 42 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1991:1540 CAPLUS
DOCUMENT NUMBER: 114:1540
TITLE: Sequence of a **cDNA** encoding human galactose-1-phosphate uridyl transferase
AUTHOR(S): Flach, James E.; Reichardt, Juergen K. V.; Elsas, Louis J., II
CORPORATE SOURCE: Dep. Pediatr., Emory Univ., Atlanta, GA, 30322, USA
SOURCE: Mol. Biol. Med. (1990), 7(4), 365-9
CODEN: MBIMDG; ISSN: 0735-1313
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A revised sequence of a **cDNA** that encodes a human galactose-1-phosphate uridyl transferase is reported here. The **cDNA** is 1295 bases in length and encodes a 43,000 Mr protein. The sequence was derived from a **cDNA** clone isolated from a transformed human lymphoblast cell line and amplified in a polymerase chain reaction. The revised sequence reveals a higher degree of amino acid conservation between the human enzyme and the homologous enzymes from Escherichia **coli** and yeast than was previously thought to exist.

Search Results -

Terms	Documents
L11 and Corynebacterium	2

Database: US Patents Full-Text Database
JPO Abstracts Database
EPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Refine Search: L11 and Corynebacterium

Clear

Search History

Today's Date: 9/21/2000

DB Name	Query	Hit Count	Set Name
USPT,JPAB,EPAB,DWPI	L11 and Corynebacterium	2	L13
USPT,JPAB,EPAB,DWPI	L11 and Corynebacterium	2	L12
USPT,JPAB,EPAB,DWPI	L4 and galactose	87	L11
USPT	4296203.pn.	1	L10
USPT	5516665.pn.	1	L9
USPT	5409817.pn.	1	L8
USPT,JPAB,EPAB,DWPI	L5 and orotic acid	0	L7
USPT,JPAB,EPAB,DWPI	L2 and orotic acid	1	L6
USPT,JPAB,EPAB,DWPI	L2 and galactose	67	L5
USPT,JPAB,EPAB,DWPI	L1 and orotic adj acid	378	L4
USPT,JPAB,EPAB,DWPI	L1 and orotic adj acid	378	L3
USPT,JPAB,EPAB,DWPI	L1 and (sugar adj nucleotide)	185	L2
USPT,JPAB,EPAB,DWPI	synthesis OR biosynthesis OR product? Or process? same (sugar adj nucleotide)	925064	L1

Search Results -

Terms	Documents
Corynebacterium and l3	4

Database: US Patents Full-Text Database
JPO Abstracts Database
EPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Refine Search: Corynebacterium and l3 | Clear

Search History

Today's Date: 9/21/2000

DB Name	Query	Hit Count	Set Name
USPT,JPAB,EPAB,DWPI	Corynebacterium and l3	4	L6
USPT,JPAB,EPAB,DWPI	synthesis OR biosynthesis same l3	252198	L5
USPT,JPAB,EPAB,DWPI	(Prepara? OR Process or making or manufacture) same l3	7	L4
USPT,JPAB,EPAB,DWPI	UDP-galactose	121	L3
USPT,JPAB,EPAB,DWPI	phosphogalactose	4	L2
USPT,JPAB,EPAB,DWPI	(uridine adj phosphogalactose) OR (Uridine adj phosphoglucose)	0	L1